

FENCE CONSTRUCTION SYSTEM FOR BUILDING A FENCE WITH  
A WALL APPEARANCE AND CHARACTERISTICS AND  
METHOD FOR BUILDING SUCH A FENCE

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Background of the Invention:

Field of the Invention:

The present invention relates to a fence construction system for building a fence and a method for building a fence. More

10 particularly, the invention relates to a fence construction system for building a fence that looks like a wall and a method of using such a fence construction system to build the fence.

The fence construction system and method of the present invention are very easy to use and can build fences inexpensively with an elegant wall appearance and additional security.

It is common practice for a homeowner or a land developer to build a fence around his or her property to separate the property from neighbor's properties and provide the house with a certain extent of privacy and security. However, a regular fence often cannot prevent the passersby from looking through the fence and cannot provide satisfactory appearance and security. In order to protect privacy, to provide higher security and to improve the appearance of the house, some homeowners and land developers choose to build a wall.

However, it is very expensive and time consuming to build a wall. Therefore, not everybody can afford to build a wall. The people who cannot afford a wall and who are not satisfied with a regular fence do not have any other choice.

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Therefore, there is a need for a new fence construction system and a method for building such a fence that has a wall appearance and characteristics but is much less expensive and easier to build.

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Description of Related Prior Art:

Williams (US Patent No. 3,869,530) teaches a procedure for constructing circular concrete walls in sectors. Tension is applied to peripheral reinforcing rods in the sectors to a desired degree of pre-stress after the concrete sets. The pre-stressed reinforcing rods are then grouted through the use of hollow rods and vented couplings.

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Dawson (US Patent No. 5,501,057) teaches a unit masonry fence and a method for its installation. The unit masonry fence has footings, support posts extending upwardly from the footings and prefabricated fence panels mounted over the support posts.

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Loggy (US Patent No. 4,597,925) teaches a method of constructing a modular reinforced concrete building with roof metal lath.

Ballentine (US Patent No. 167,973) teaches a wall construction of buildings in which a composition for artificial stone is filled in the space between strips on both sides of the posts. No pre-stress or post tensioning is used in the construction.

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Deslauriers (US Patent No. 520,137) teaches a fireproof and slow burning building wall with a sheet metal covering. Metallic studs, horizontal angle bars and wire laths underneath the bars constitute a metallic framework. No pre-stress or post

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Watkins (US Patent No. 5,894,704) teaches a bearing wall construction process without removable forms wherein a reinforcing screen is encased within concrete during a concrete blowing step.

Nelson (US Patent No. 4,365,451) teaches a poured adobe building construction and a method for forming the same.

20 Hopman (US Patent No. 4,366,657) teaches a method and a form for mechanically pouring adobe structures.

All of the above-mentioned references relate basically to the construction of walls for buildings, which require high supporting ability. These wall constructions are basically formed by pouring concrete, adobe or other material within forms or formed by prefabricated bricks or stones, which are very

complicated and are very expensive to construct. None of them is constructed specifically for the purpose of building a fence with a wall appearance and characteristics at low cost.

5 Summary of The Invention:

It is accordingly an object of the present invention to provide a fence construction system for building a fence having wall appearance and characteristics, and a method for building such a fence, which overcome the deficiencies of both the conventional  
10 fence and the conventional wall.

Another object of the present invention is to provide a fence construction system and a method for building a fence, which are easy to use and can substantially lower the cost of such  
15 structures.

In one aspect, the present invention relates to a method for constructing a fence with a wall appearance and characteristics, comprising the steps of:  
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erecting a plurality of fence posts including two end fence posts;

erecting two temporary ratcheting posts beyond the two end fence  
25 posts with a plurality of ratchets fixed on the ratcheting posts;

stringing a plurality of high-tension tensile wires between the temporary ratcheting posts;

tensioning the high-tension tensile wires with the ratchets;

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securing the high-tension tensile wires to the fence posts;

securing wire lath to the pre-stressed high-tension tensile wires;

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applying fence coating material to the wire lath;

cutting the high-tension tensile wires beyond the end fence posts; and

removing the temporary ratcheting posts.

In accordance with another feature of the invention, the method for constructing a fence with a wall appearance and

20 characteristics further comprises:

marking fence layout and post locations according to a survey;

digging post holes in the marked post locations;

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placing the fence posts in the post holes;

plumbing and aligning the fence posts; and

securing the fence posts in the post holes by concrete.

- 5 In accordance with another feature of the invention, the post holes are preferably 8''x 10'' in diameter and 24'' in depth.

In accordance with another feature of the invention, the method for constructing a fence with a wall appearance and  
10 characteristics further comprises touching up the end fence posts where the high-tension tensile wires were cut.

In accordance with another feature of the invention, the method for constructing a fence with a wall appearance and  
15 characteristics further comprises painting with a final coat to the surface of the fence coating material.

In accordance with another feature of the invention, the size and number of the fence posts are determined by fence dimension,  
20 configuration, soil condition and local construction regulations.

In accordance with another feature of the invention, the fence posts are secured in the post holes by 2500psi concrete.

- 25 In accordance with another feature of the invention, the fence posts are secured in the post holes by pulling the fence posts a distance upwards before the concrete sets.

In accordance with another feature of the invention, the high-tension tensile wires are strung between the temporary ratcheting posts at one side of the fence posts.

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In accordance with another feature of the invention, the high-tension tensile wires are strung between the temporary ratcheting posts at both sides of the fence posts.

10 In accordance with another feature of the invention, the high-tension tensile wires are spaced at about an 8-12 inch vertical separation.

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In accordance with another feature of the invention, the high-tension tensile wires are tensioned with a torque of about 150-250 LBS per square inch.

In accordance with another feature of the invention, the high-tension tensile wires are secured to the fence posts with  
20 fasteners such as staples and clips.

In accordance with another feature of the invention, the wire lath is secured to the high-tension tensile wires with fastener clips.

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In accordance with an additional feature of the invention, the step of applying fence coating material to the wire lath is performed by:

applying a scratch coat to the wire lath;

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applying a brown coat to the surface of the scratch coat; and

applying a texture coat to the surface of the brown coat.

10 In accordance with another feature of the invention, the method for constructing a fence with a wall appearance and characteristics further comprises securing the wire lath to the fence posts.

15 In another aspect, the present invention relates to a fence construction system, comprising:

a plurality of fence posts;

20 at least two temporary ratcheting posts, one of the ratcheting posts having a plurality of holes formed therein;

a plurality of ratchets secured in at least some of the holes;

25 a plurality of high-tension tensile wires running between the temporary ratcheting posts and secured to the plurality of fence posts; and



a wire lath secured to the plurality of high-tension tensile wires.

In accordance with another feature of the invention, the high-  
5 tension tensile wires are about 12-18 gauge.

In accordance with another feature of the invention, the wire lath is 2.8-3.4 galvanized metal or plastic.

10 In accordance with an additional feature of the invention, the fence construction system further comprises a fence coating applied to the wire lath.

15 In accordance with another feature of the invention, the fence coating includes a scratch coat applied to the wire lath, a brown coat applied to the surface of the scratch coat and a texture coat applied to the surface of the brown coat.

20 In accordance with another feature of the invention, the scratch coat is a Portland cement mixture with polymers, various fiber particles and selected sizes of aggregate.

In accordance with another feature of the invention, the brown coat is of the same mixture as the scratch coat.

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In accordance with another feature of the invention, both the scratch coat and the brown coat have the thickness of about 3/8 inch.

- 5 In accordance with an additional feature of the invention, the fence construction system further comprises a paint applied on the fence coating.

10 In accordance with another feature of the invention, the paint is a prime coat or a color coat.

In accordance with an additional feature of the invention, the fence construction system further comprises a pre-constructed non-structural decoration column.

In a further aspect, the present invention relates to a fence comprising:

a plurality of fence posts;

a plurality of high-tension tensile wires secured to the plurality of fence posts;

a wire lath secured to the plurality of high-tension tensile wires; and

a fence coating applied to the wire lath.

In accordance with another feature of the invention, the fence further comprises a paint applied to the surface of the fence coating.

5 Additional objects and advantages of the invention will be set forth in part in the description which follows, and in part will be clear from the description, or may be learned by practice of the invention. The advantages of the invention will be realized and attained by the elements and combinations particularly  
10 pointed out in the appended claims. It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention, as claimed.

15 Brief Description of the Drawings:

Fig. 1 is a diagrammatic front elevational view of the fence construction system with a partially constructed fence according to the present invention;

20 Fig. 2 is a view similar to Fig. 1, showing the temporary ratcheting posts in their tilted positions after the tensioning of the high-tension tensile wires;

Fig. 3 is a top-plan view of the fence construction system of

25 Fig. 1, showing a wire lath applied at one side of the fence posts and an additional pre-constructed non-structural decoration column;

Fig. 4 is a top-plan view of the fence construction of Fig. 1, showing wire laths applied at both sides of the fence posts;

5 Fig. 5 is a cross-sectional view taken along a line A-A of Fig. 3, in the direction of the arrows; and

Fig. 6 is a cross-sectional view taken along a line B-B of Fig. 4, in the direction of the arrows.

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Detailed Description of the Preferred Embodiments:

The present invention may be understood more readily by reference to the following detailed description of preferred embodiments of the invention.

Before the present invention is disclosed and described, it is to be understood that the terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting. It must be noted that, as used in the specification and the appended claims, the singular forms "a," "an" and "the" include plural referents unless the context clearly dictates otherwise.

The present invention will now be described in detail with reference to the accompanying drawings.

Referring to the drawings and initially to Fig. 1, there is diagrammatically shown a representative fence construction system generally designated by the reference numeral 10. Before beginning the construction of the fence, a survey must be conducted to decide the size, the height and the configuration of the fence, according to which the fence layout and post locations are then decided and marked. Post holes (shown in Figs. 5-6) are then dug at the post locations. The post holes can be of any size big enough for the fence posts, but are preferably to be about 8 inches X 10 inches in diameter and about 24 inches in depth. Fence posts 20 are then placed into the post holes. The number and the size of the fence posts and the distance between the fence posts are determined by the dimensions and configuration of the fence. The fence posts are then plumbed, aligned to the layout of the fence and secured with concrete, e.g., 2500psi concrete, in the post holes. As is shown in Figs. 5 and 6, depending on the soil, the post holes can be deeper than the embedment of the fence posts to avoid the contact of the bottom of the fence posts with the soil. This can be done by pulling the fence posts a distance upwards before the concrete sets.

Next, two temporary ratcheting posts 30 are installed beyond two end fence posts. One of the ratcheting posts has a plurality of holes 32 on two opposite side faces (only one side is shown) of the ratcheting post for the assembly of ratchets 34 (only one is shown as an example). The number of ratchets 34 depends on the

number of high-tension tensile wires to be used, which in turn depends on the customers' requirement and the local government regulations. A plurality of high-tension tensile wires 40 are strung between the two ratcheting posts 30 at one side or both sides of the fence posts 20. One end of each wire is fixed to one ratcheting post and the other end is attached to a ratchet on the other ratcheting post. The high-tension tensile wires 40 are about 12-18 gauge and spaced about 8-12 inches apart vertically.

10 The high-tension tensile wires 40 (e.g. A102 Superlife 12 HT wire) are tensioned by turning the ratchets 34 (e.g. distributed by MAX-FLEX) clockwise to a torque of about 150-250 LBS per square inch and then are secured to the fence posts 20 by staples, clips or any other fasteners. As is shown in Fig. 2, after applying the tension to the high-tension tensile wires 40, the ratcheting posts 30 might incline towards each other. In order to secure the ratcheting posts 30 during the construction, additional supporting posts 50 can be used.

20 As is shown in Figs. 1, 3 and 4, wire lath(s) 60 can be secured to one or both opposite sides of the fence posts 20 and to the tensioned tensile wires 40 by clips or any other fasteners 62 (e.g. A300 Spring clip tighteners). The wire laths can be galvanized metal or plastic and are about 2.8-3.4 gauge. Fence  
25 coating material 70 is then applied to the surface of the wire lath. The WONDERTEC™ coating material produced by Wondertec of America, Inc. is especially suitable for building the fence

construction according to the present invention. Alternatively, other coating material (such as ASTM A 854-94 with a minimum strength requirement of 1800 PSI) can also be used. Typically, the coating material 70 includes three coating layers 72, 74 and 76 (see Fig. 1). First, a scratch coat 72 (e.g. Portland cement mixture with polymers, various fiber particles and selected sizes of aggregate) is applied with potable water to the wire lath. Then a brown coat 74 of the same mixture is applied to the surface of the scratch coat. At last a finish coat 76 (e.g. texture coat of choice) is applied to the surface of the brown coat. The thickness of the scratch coat layer and the brown coat layer are about 3/8 inch.

After the forming of the coating, the tensioned high-tension tensile wires 40 are cut outside the end fence posts to create a post-tension condition in the fence construction. The temporary ratcheting posts 30 are then removed and the end fence posts are touched up at where the high-tension tensile wires were cut. The thus-formed fence construction can then be painted with a prime coat or a color coat according to choice.

To further improve the appearance of the fence, wire lath and coating can also be applied on the top surface of the fence (as shown in Figs. 5 and 6). Pre-constructed non-structural columns 80 (as shown in Fig. 3), which are made of wooden vertical posts in the corners, horizontal spaces therebetween and wire lath and

stucco, can be used to provide decoration at the corners or gate of the fence.

The fence construction system according to the present invention  
5 can be used to build a fence portion of up to 300 feet long at one time.

Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and  
10 practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only.